Session 3A:Characterizing and Protecting Nearshore Habitats

Questions & Answers

Helen Berry
Q: You had one graph with Carr Inlet that had various habitat types; is that a line-based computation or is that an aerial computation?

Berry: It's a line-based computation and any numerical analyses needs to take into consideration that these computations are line-based and the measure is from ordinary high water. If you measure a beach at low tide versus at high tide, you're going to get different line amount so the systems tends to break down in places with extensive flats that are less well represented by a line, so Willapa Bay, Skagit Bay—those places work less well summarized as a line feature.

Q: You're still holding approximate width information in the table, though.

Berry: Good point John. The component table includes approximate width estimations so you can get a sense of how wide your intertidal area is, and those are summed up at the unit level. So you do have a rough estimate, but this estimate makes the shoreline into a rectangle, which works well in some places where the shoreline is fairly long and narrow, and less well in places where it's more complex shaped.

Q: There's a long-term effort now undertaken by the SRFBRD with watershed inventories. We're involved with a couple of them as well as we do a lot of underwater surveys, eelgrass, geoducks and other macroalgae species. There is a plethora of scientific data collected by WDFW protocol. I'm curious, are there any ideas or plans to take some of that specific data and wrap it into work? How clearly integratable is your database with the specific site selections that we'll be doing on, say, the Oakland Bay Hammersly Inlet WRIA nearshore habitat inventory? When we go dig clams and pickleweed…whatever we wind up doing…how integratable will that specific site information be to the database? Would it be useful at all?

Berry: Early on, we were working on John Carleton and Ken Warheit at Fish and Wildlife and our hope has always been to make data. That became difficult because our budget cycles don't work across agencies, but obviously, technically, data integration is easy if it's spatial. You can overlay all the data, and it shows up. We found that with our own studies, we also do much higher resolution mapping and monitoring. You may have heard a paper by Carl Schoch yesterday about that work. We found that you can integrate the data as long as you remember that generalized data is different than high-resolution data. And so, for instance, and also the data capture methods are crucial. From a helicopter you can't see a clam because it's under the sand, and so infauna is underrepresented by an inventory system such as ShoreZone. I don't know of anyone in the state who is planning to provide an integrated database where they take all the information from everywhere and put it together. I heard there were some proposals to the SRFBRD for that sort of work.

A: I might add a little bit to that. When we first got together with John Harper to do the pilot project, we chose San Juan Island because of its convenient location to him. The way we sold the idea was we had some people work to integrate data layers from our own GIS systems that we were using, not necessarily only ones that we maintained but we took San Juan Island, we cookie-cutted out our heritage database, bald eagle nests, that kind of thing, point data. We overlaid Department of Transportation road system data. We took the national wetland inventory data and we integrated that. We had our PHS data set, which is a polygon data set, that we integrated with that, and we put it together in one kind of show-and-tell database, and because they were all spatially oriented data sets, they worked together very well. The data sets seemed to work together very nicely in terms of management issues the caveat that Helen gave you that the lines data set for the shoreline, the ShoreZone Inventory system—it was renamed when DNR took it over—has its own limitations, but it's like any of the other data sets that they have their limitations. You have to know how to use them and how they are not supposed to be used. One other comment, Dan Doty of the Oil Spill

Team in our agency has that San Juan data set with the combined data layers on his computer and he told me he would be available at the workshop that DNR is going to be putting on tonight so you can get an example of how those particular data sets work together. And Helen had another point to make. If you want a copy of the CD, we brought some copies. The only thing we ask of you is to leave a business card to track that we sent it to you, for justification for funding to continue this program. And if you use the data, send us an e-mail and tell us how you use it.

Q: It looks like you have a wonderful opportunity to characterize the riparian. What characteristics did you pick up in the riparian area?

A: One of the interesting fields that we added to the database from to the BC data is overhanging riparian vegetation into the intertidal zone. It is just assessed for unconsolidated shorelines; it's not assessed for bedrock, but the purpose of it is to get some sense of shading for bait fish so that is one of the fields in the database. Anyone who wants to come by at 6: p.m. tonight, those are the kinds of things we can look at, and we can actually show you that data. The basic look is from the top of the berm or cliff in the supertidal area. It doesn't go all the way back, but it's what they can see and distinguish from the top of the berm of the cliff down through the supertidal that's remaining and then through the intertidal. There's also room to put subtidal data in there if and when we collect it.

Amy Sewell
Q: I appreciate the concern with statistical rigor, but given the huge spatial coverage that you have, are you concerned at all that you might have randomized yourself out of detecting changes?

Sewell: You mean for our core sites?

Q: No, for the whole area represented on the poster.

Sewell: We decided to just do a very broad sampling because we don't have enough money to do a lot of sites, and every time you stratify your data, your number of sites per strata goes down and the power of your experiment definitely decreases, so we were hoping to do some *a priori* studies after we collect more data and then we can use different gradients like you're talking about and try to see what changes we have. We don't even have the data in, so that is always a worry. We're just hoping we can get some estimate.

Q: We, too, use the underwater video quite a bit, and I am fascinated with your application. I think it's long overdue. My first question is, will the methods be published so those of us that are using underwater video for monitoring marine vegetation, whether it's eelgrass or kelp, we can keep the monitoring standardized? I think that's something that's been missing in Puget Sound for too long.

Sewell: Yes, the results will be out hopefully in March, and we're working on putting the methods in a context that will be easily repeatable and we tried also to design the program so you can use a slightly different type of data collection as long as you are doing the transect method. Then all of the statistical equations will work, so we know that this is a long-term monitoring program; we know the technology will change in 10 years or five years, so you would be kind of crazy to design something that would be just a video camera that we won't even have in 10 years. So that was one of our goals.

Q: My second question is, it's actually more of a comment. We did a study in Picnic Cove about nine years ago when [??] trenched right down the middle of it. Is that trench healed over? We did some playing around with eelgrass out there many years ago. I'm curious, were you on the boat and observed the video or did you avoid that center line trench?

Sewell: I'd look to turn that over to Sandy because that's sort of his pet site. He will speak to Sandy later. I was on the boat during that site and we did some of the trench line actually. You could see it on the video, but I don't want to say exactly if it's healed over. We should look at the data.

Q: There's certainly lots of areas in Puget Sound where eelgrass is extended to below the 20-foot line. I didn't quite catch why you chose that line?

A: Thanks for asking that question. We just wanted a linear subtidal line that we could segment into the 1,000-meter sample sites. When we're actually going in the study, if you remember that slide, there were the big red dots at the beginning and end of your 1,000 meter transect and if that particular area was chosen, you got the lat/long coordinates for those dots, and so we go out there with the boat and start at that dot, and we're going to be doing a zigzag transect going out to the varying deepest extent of the bed and then turning around and going up to the most intertidal extent of the bed. And yes, it will be below 20 if you can drive your boat below 20. It's just that's sort of the line that you use as your sample and then you just go in and out from the shore, off shore, in the shore, off shore, and each transect will have a maximum/minimum depth, and so we're going to get the average maximum depth of the bed and that's a really important characteristic. Maximum depth can represent a good indicator of the habitat quality, most of these sort of water quality issues, if all of a sudden you noticed in one area that your maximum depth is much shallower, it's either due to a bad sun year or it's due to some water quality problem. So maximum depth is a parameter we really want to pay attention to. Thanks for asking that question because I didn't have enough of time to explain it very well. Hopefully, we'll get some better GIS lines, if we were able to pick what GIS line we wanted, I would say maybe minus 7 would be a very good contour. That would probably run through most of the beds around the Sound. There's a lot of good depth data that Battelle is collecting and other people, and I think minus 7 would be great, but minus 20 is all we had at the time.